THE SOUTHERN RIGHT WHALE DOLPHIN, *LISSODELPHIS PERONI* (LACÉPÈDE)

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THE SOUTHERN RIGHT WHALE DOLPHIN, *LISSODELPHIS PERONI* (LACÉPÈDE)

EXTERNAL CHARACTERS AND DISTRIBUTION

By F. C. FRASER

EARLY in 1952 three dolphins became stranded on the beach at Onekaka, Golden Bay, which is at the northern end of South Island, New Zealand. Mrs. G. J. Goulter of Golden Bay took an 8 mm. colour film of the animals, all of which were alive. They were eventually returned to the sea and swam away apparently none the worse for their temporary sojourn on dry land. I wish to express my thanks to Mrs. Goulter for her permission to let prints be made of three of the frames of the film and also to her brother, Captain R. E. Washbourn, R.N., who brought the film to the British Museum and helped in the subsequent arrangements for pictures from it to be used in the present note.

It was clear as soon as the film was projected that the dolphins belonged to the species *Lissodelphis peroni*, the Southern Right Whale Dolphin, and although this species has been recognized for a century and a half I am not aware that any photographic record of it has previously been published. The photographs (Pl. 12) show the characteristic external features of this species, the most noteworthy of course being the absence of a dorsal fin and the spectacular coloration of the body. The pictures of the three animals resting on the sand (Pl. 12) suggest that they unlike most dolphins, are broader than deep in the thoracic region. While this appearance may only be due to the shape assumed by the body when not waterborne, it is possible that it may be natural and is perhaps a stabilizing factor in an ocean-going dolphin which lacks a dorsal fin. The slender tail stock can be seen and, although none of the pictures reproduced here gives a good impression of the pectoral fins, inspection of the whole film indicated that their shape is, as in very many of the Delphinidae, with shallowly convex anterior border and with the hinder margin convex proximally and concave distally. The head is seen to taper to a snout which, laterally, is well defined from the " forehead " by an angular depression shallowing as it approaches the middle plane of the head, so that in the profile of the head the " forehead " merges into the rostrum with only the slightest indication of a break in the line. The tip of the lower jaw protrudes to a noticeable distance beyond that of the upper.

The dorsal surface of the body is of a bluish-black colour which is sharply demarcated from the glistening white ventral region. Snout, forehead and lower jaws are

white ; the blowhole and eyes come within the pigmented area. From the top of the head, where the pigment extends anteriorly in a little peak, the boundary between black and white sweeps low down on the lateral surface of the thorax, reaching its lowest limit about the insertion of the flippers, which have their origin in the unpigmented region. The boundary then takes an upward direction until about half the depth of the body is reached in the lumbar region. Thence it continues caudad about midway between the dorsal and ventral margins of the body. A close inspection of the film was made to decide about the dorsal surface of the tail flukes. Some indication of the amount of pigment on the tail of one of the specimens can be obtained from Pl. 12, fig. 3, but allowance has to be made for the high-light which gives an impression of a lightness of pigmentation not present in the animal itself. While in the specimen just referred to the colour was grey-blue, in one at least of the remaining two the dorsal surface of the flukes was of exactly the same bluish-black colour as the back. In addition it was seen in the film that the posterior margin of the white ventral surface of the flukes was bordered by a thin band of dark pigmentation in one specimen, while in another the band was appreciably wider, about an inch at its widest. There was definite evidence in part of the film that, although at first sight the flippers appeared altogether white, at least one of the animals had a narrow elongated darkly-pigmented patch filling the apex of the proximal convexity on the posterior border of the limb.

The first published description of *L. peroni*, that of Lacépède (1804) includes comment on the contrast of the dark colour of the back with the brilliant white of the sides and belly and with that at the end of the tail, the extremity of the snout and on the flippers.

Lesson (1827) gives a more detailed account of the external appearance of this species of dolphin. " Arrondi dans ses contours, gracieux dans ses formes, lisse dans toutes ses parties, ce cétacé est d'autant plus remarquable, qu'il semble recouvert d'un camail noir. Son museau jusqu'à l'oeil est d'un blanc soyeux ou argentin. Il en est de même des côtés du corps, des nageoires pectorales, du ventre et d'une partie de la queue. Un large scapulaire, d'un bleu-noir foncé, prenant naissance aux yeux où le blanc décrit un croissant, se dessine et se recourbe sur les flancs, pour recouvrir seulement la partie supérieure du dos. Le bord antérieur des nageoires pectorales et caudales est brun. Le museau est allongé, séparé du crâne par un sillon profond." The figure of the specimen (Lesson's Pl. 9, fig. 1) does not convey the elegance of form expressed in the description and in particular the shape of the attenuated snout is quite unlike that of the animals photographed in New Zealand.

Bennett (1840) says : " The upper and hind part of the head, the back, and flukes are of a uniform deep-black colour which about the lower third of the body, terminates by a straight and abrupt line, leaving the entire abdomen, and inferior portions of the sides, of a pure and dead white. The snout, and anterior third of the head, are entirely white ; as also are the swimming paws, with the exception of a broad black spot on the upper surface and posterior margin of each." Bennett's figure is of an animal with a disproportionately large head and a body deep in comparison with its length.

Gray (1846) quotes Cuvier's criticism of the snout shape as depicted by Lesson and

on his own account draws attention to the restriction in the latter's figure of the pigmented dorsal part of the body. He reproduces drawings made at sea which in these essentials resemble the animals photographed in New Zealand. In Gray's figures the upper surface of the tail-flukes is of the same dark colour as the dorsal surface of the body. His lateral view of the dolphin shows the profile of the anterior end of the lower jaw continuing the line of the profile of the snout. This is not substantiated in the rounded lower jaw tip of the New Zealand animals.

D'Orbigny and Gervais (1847) have the briefest description of a specimen harpooned near Cape Horn. The drawing in their account shews an animal somewhat slender in form, with the conventional pattern of pigmentation on the dorsal surface of the body and having the dorsal surface of the flukes of the same black colour. In addition the dorsal surface of the snout has pigment on it which does not, however, extend to the margin of the upper jaw and stops short of the pigmentation on the top of the head. The flipper is shown bearing a large irregular black spot about the middle of the posterior edge, and on the tail stock, just anterior to the insertion of the flukes, four short oblique flecks of dark colour project ventro-caudally from the boundary which separates the black of the back from the white of the under surface.

Philippi (1893) describes two specimens caught off the east of Patagonia about 41° S. The figure which he gives of one of these indicates that, in general, the animal was like those described by earlier writers. Philippi says that the flippers were pure white above and below, only the rearmost corner and tip being black, and the tail black above, white below with black posterior border.

Lillie (1915) refers briefly to *L. peroni* having been seen twice, a pair of animals on each occasion. He states that all four were exactly alike and agreed with Gray's figure except that the tail flukes were quite white above and below.

Summing up the foregoing descriptions, it would appear likely that only one species of *Lissodelphis* is involved for which the name *L. peroni* has priority. The colour pattern is constant so far as it concerns the amount of black on the back and white on the belly but varies in the amount of pigmentation on the snout, flippers and on the dorsal surface and ventral margin of the tail flukes.

This colour pattern is clearly distinguishable from that of the northern form *L. borealis* (Peale). Excellent photographs of this northern species are to be found in the account of Scheffer and Slipp (1948). These show an animal which is much more extensively pigmented than its southern congener. In *L. borealis* the dark pigmentation covers the greater part of the body. The rostrum and anterior part of the " forehead " appear light grey in one of the photographs in the paper just referred to and the end of the lower jaw is without pigment. A roughly lozenge-shaped area of white lies between the flippers on the ventral surface of the body which, anteriorly, extends on to the throat, where it ends in a sharp angle. Posteriorly it is drawn out to become a thin white line in the umbilical region and thence to the tail it widens out again very gradually. The dorsal surface of the tail is black and the ventral surface white with a black band on the middle line and posterior border.

In the consideration of the geographical distribution of *L. peroni* it is convenient

to start with the type locality and continue eastwards round the globe. Peron (1807) himself says that the species which bears his name was based on a specimen caught off the south coast of Tasmania ; on the day following the capture the ship's position was 44° S., 141° 27′ E. Flower and Garson (1884) record a skull which was sent to the Royal College of Surgeons from Tasmania. Lillie saw the dolphin on two occasions in positions 42° 51′ S., 153° 56′ E. and 47° 04′ S., 171° 33′ E. respectively, the former being eastward of Tasmania, the latter off the southern end of the east coast of South Island, New Zealand.

The three specimens which are the subject of the present paper stranded on the north end of South Island. The specimen figured by Gray (1846) was seen in position 46° 48′ S., 142° W. that is roughly halfway between New Zealand and the southern end of South America.

In the neighbourhood of Cape Horn, Malm's (1871) record of a skull from " Southern Chile " is not by itself very indicative as to exact locality but it may legitimately be mentioned in association with the other reports from the same region. Lesson (1827) saw the dolphin near Pillar Cape at the western end of the Straits of Magellan and says that on the 12th January, 1823, several hundred surrounded the " Coquille ", the ship then being three days south of the Chonos Archipelago, Chile, that is about 45° S. Bennett (1840) first saw specimens of *L. peroni* in 40° S., 50° W., south eastwards from the mouth of the Rio de la Plata. It was afterwards frequently seen by him during the passage round the Horn as far south as 54° S., but was not observed in lower latitudes than 40° S. on the western side of Cape Horn, nor indeed during any subsequent part of the voyage. Philippi's (1893) specimens, a male and a female, were caught off the east coast of Patagonia about 41° S. D'Orbigny and Gervais (1847) say it was observed around Cape Horn from 58° to 64° S. Mr. R. M. Laws (St. Catherine's College, Cambridge) to whom I am indebted for the record, has informed me that while on a passage from Monte Video to Stanley, Falkland Islands, he saw dolphins which were unquestionably *L. peroni*. The extract from his diary reads: " Jan. 22nd, 1948, 16·50 hours. A school of about 60 dolphins approached the ship from a S.E. direction. Some accompanied us for a few minutes. . . . There were two types, one greyish on top and white below with no definite line of demarcation and with a very pointed beak. It also had two parallel white lines along the flanks. (Probably *Lagenorhynchus obscurus*. F.C.F.). The other species was black and white clear cut, with *no* dorsal fin and having a white beak . . . a fix at 19.40 hours gave our position as 42° 2′ S., 56° 6′ W."

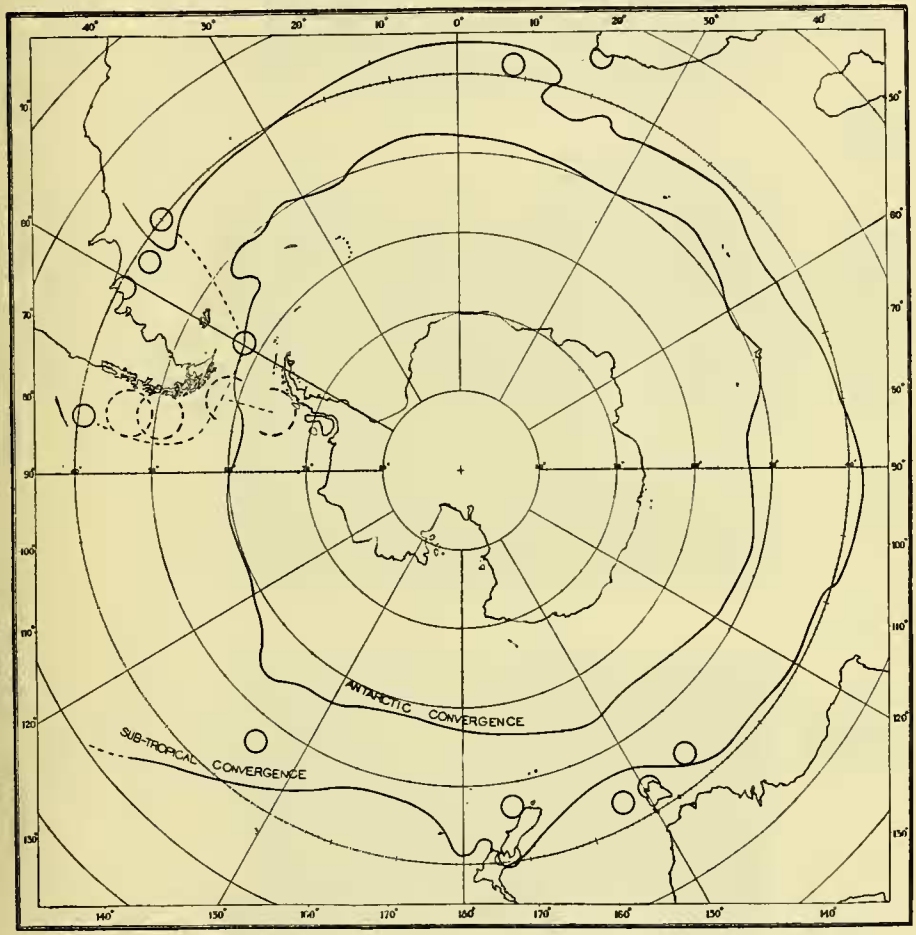
Eastwards across the South Atlantic at the southern end of the African continent two records are known. Schlegel (1841) refers to a skull which came from the Cape of Good Hope, but True (1889) is doubtful about the identity of this specimen. The other record is that of Dr. J. E. Hamilton, who in 1927 recorded and made a drawing of a dolphin which is certainly *L. peroni*, seen in position 38° 34′ S., 8° 06′ E.

The only remaining acceptable record, and it is not a very precise one, is that of Lesson (loc. cit.), who says that the dolphin " was seen in 45° S. in circumnavigating Australia."

Quoy and Gaimard (1824) refer to a dolphin with long white beak seen in 2° S. near New Guinea. This was distinguished as " delphinus Peroni de Lacépède ".

Neither this brief description nor the place of occurrence justifies acceptance of the record.

The well-substantiated places of occurrence of *Lissodelphis peroni* indicate that it probably ranges round the world in the southern hemisphere. Although it is not entirely restricted to the West Wind Drift it appears to have some predilection for it, because, as shown in Fig. 4, those records to the north of the Sub-tropical Convergence are for the most part close to that boundary, and except for one sight record there is no evidence that it penetrates into the Antarctic Ocean.



TEXT–FIG. 1. Distribution of *Lissodelphis peroni*. Complete circles indicate precise positions, dotted circles and lines indicate less well defined places of occurrence.

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EXPLANATION OF PLATE

PLATE 12

FIGS. 1–3. *Lissodelphis peroni.* Figs. 1 and 2. The dolphins on the beach at Onekaka, South Island, New Zealand. Fig. 3. One of the animals having been returned to the sea but not water-borne. (*Photo :* Mrs. G. L. Goulter).

LISSODELPHIS PERONI